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INGENIÖRSFIRMA

GEORG SCHÖNANDER

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STOCKHOLM 5

CABLE ADDRESS "INSTRUMENT"

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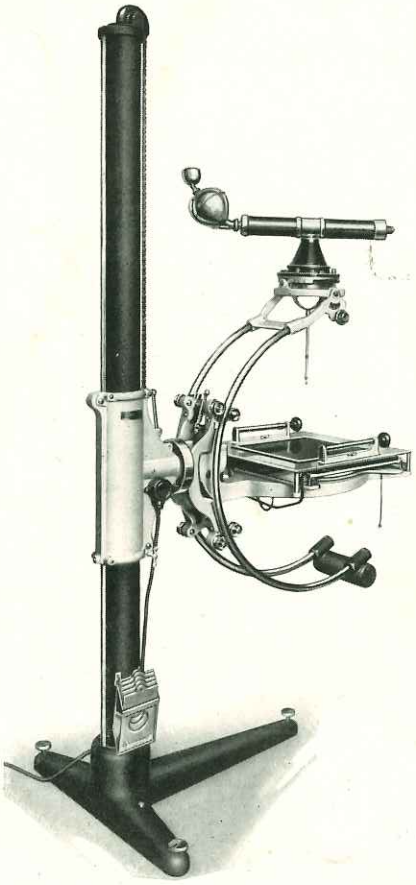
DIV. 55



THE LYSHOLM PRECISION APPARATUS FOR CRANIAL RADIOGRAPHY

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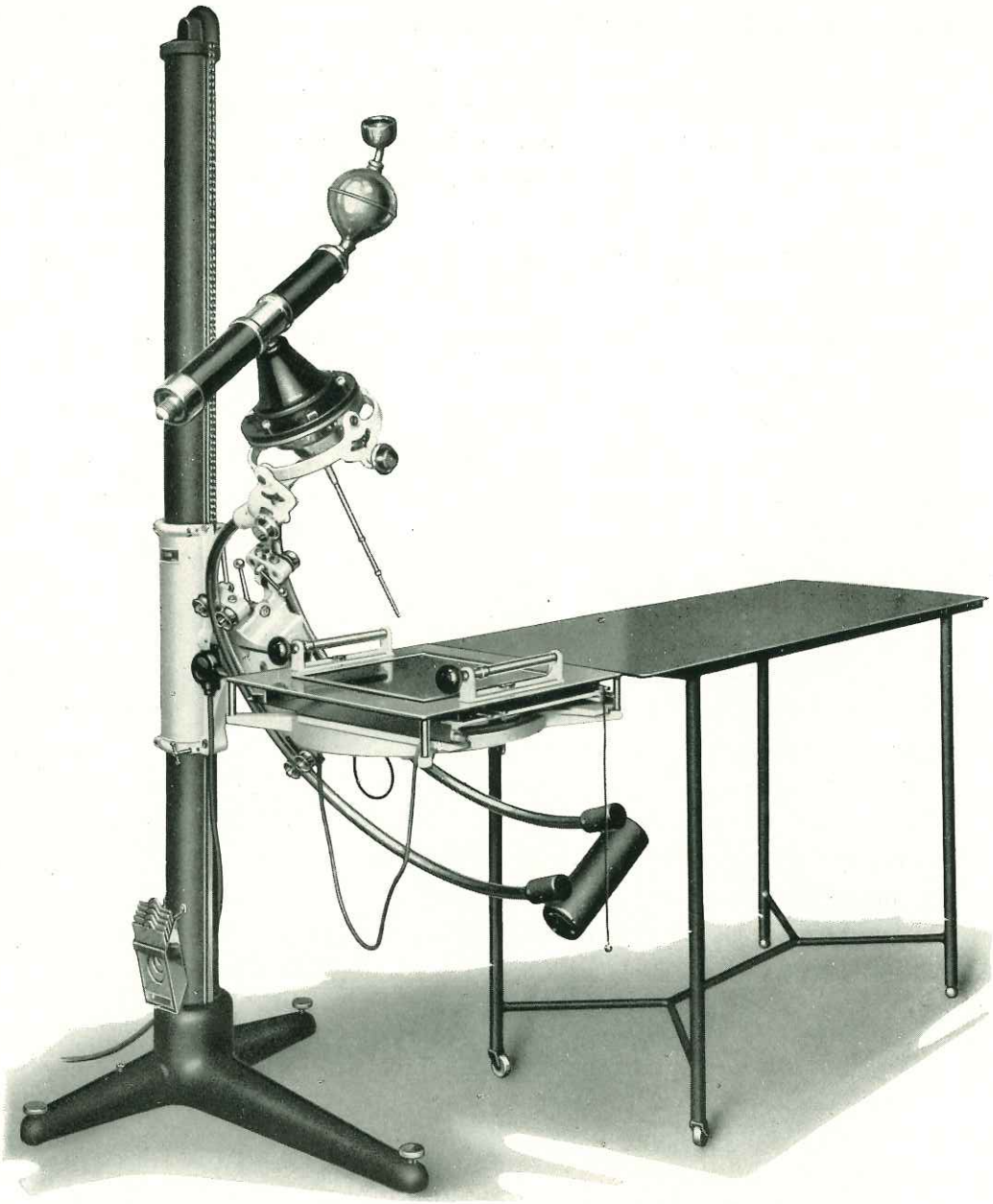

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The latest model of LYSHOLM's apparatus for cranial radiography introduces a number of important improvements on the earlier types. Briefly described, the new apparatus consists of an object table and a semicircular tube support, mounted together on a solid shaft resting on a tripod base. By a simple vertical shifting device, the table and tube support may be raised or lowered along the shaft, to any hight desired by the operator. The table and the tube support can be tilted, independently of one another, to the extent of 90 degrees, on an axle at right angles to the shaft, thus permitting examinations to be made with the patient either lying, sitting or standing. By a simple manipulation, the table and tube support may also be interlocked, so as to make them move in unison.

The top of the table consists of a metal frame, in which is mounted a sheet of celluloid for the patient's head to rest upon; the head being held in position by means of a compression device fitted to the frame.

An important innovation is the Lysholm diaphragm, constructed by us, with a new mechanism for the movement and electric release. The manipulation of this secondary diaphragm is extremely easy as its thickness is only 12 millimeters, and its weight, including that of the cassette holder, only about 4.5 kilos. As it is furthermore placed immediately underneath the celluloid sheet, closely against the latter, the distance from the patient to the film is reduced to a minimum. Owing to the extreme fineness of the grid, the absorption of the secondary rays is exceptionally effective; as a result of which roentgenographs of hitherto unobtained contrast are obtained. The cassette holder forms a unit with the secondary diaphragm, which can be rotated round the vertical axle.

The centering device underneath the celluloid head rest consists of two mirrors, set at right angles to one another, and two incandescent lamps for illuminating the object under examination. Before centering, the secondary diaphragm, together with the cassette holder, is withdrawn entirely, as shown in the illustration on page 7.

The centering from above the patient's head is done by means of a

detachable ray director, which can be lengthened and shortened telescopically, so that, at fullest extension, its extreme end reaches the surface of the celluloid sheet.

The setting is done as well from below, by means of the mirror system, as from above, by means of the ray director. This makes it possible to use very small primary diaphragms, which improves the quality of the radiographs obtained. Besides, it means a saving of films, and the patient is not exposed to any unnecessary amount of roentgen light. The setting, once made, can be easily reproduced, which makes serial examinations more reliable.

The roentgen tube is suspended in gimbals, and exposures can thus be made in excentric positions. The apparatus is particularly well adapted for the production of stereo-radiographs.

The adjustment of the table and the tube support is easily effected by means of indicating scales. All the movable parts of the apparatus are perfectly counter-balanced, so that the whole manipulation is extremely easy, and only a minimum of time required for correct adjustment.

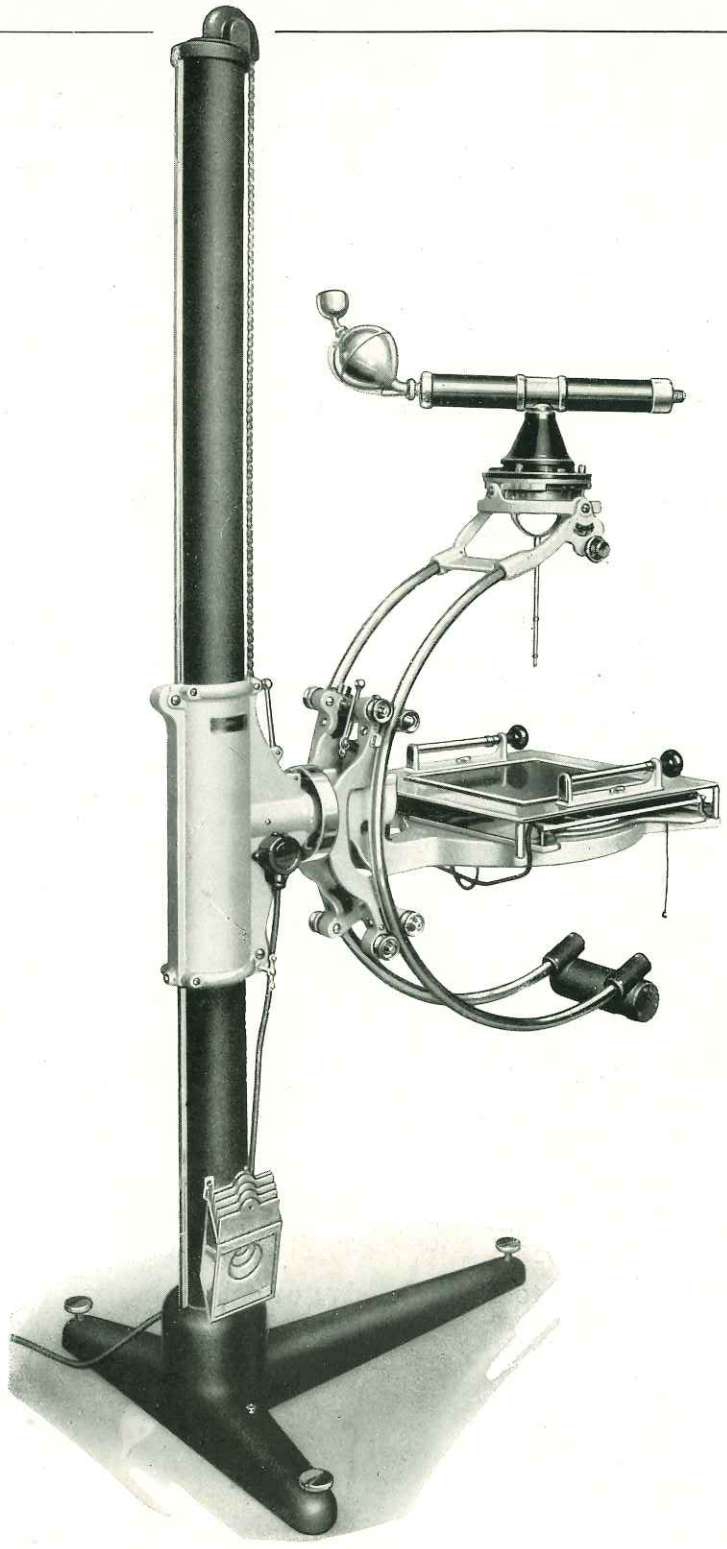
The semicircular, double arch of the tube support — at one end of which is the tube holder, while the other end is held down by a counterweight — can be swung, centrically, to any desired position, so that projection of the central ray at any conceivable angle to the plane of the film is easily obtained.

The apparatus can be used also for screening, by simply tilting the table to the vertical position and replacing the cassette by a fluoroscopic screen. The secondary diaphragm, which remains stationary, continues to serve its purpose, as its very fine lead strips do not leave the slightest shadow on the screen.

All the bright metallic parts of the apparatus are chromized.

Directions for setting.

First, the point of the patient's skull to which the central ray is to be directed is settled by means of the dermatograph, or by the



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aid of anatomical points of orientation. Next, this issue-, or base-point, of the central ray, is brought in juxtaposition to a cross in the middle of the celluloid sheet, and the position of the head secured be means of the device attached to the frame of the table. The ray director is now removed, whereupon the exposures can be made at any angle of projection desired.

Summary of principal advantages offered by the new model.

Object table can be raised and lowered, — thus making examination possible with the patient either recumbent, sitting or standing.

Table and tube support can be swung, independently of each other, to any angle desired.

Centering both from underneath, by mirrors, and from above, by ray director. Settings can be reproduced, — an important feature in the case of serial examinations.

Secondary radiation most effectively absorbed by movable Lysholm diaphragm. Distance from patient to film reduced to a minimum.

Roentgen tube suspended in gimbals. Apparatus can easily be used for stereo-radiography.

Apparatus can be used also for screening; — all that is needed is to replace the cassette by a fluoroscopic screen.

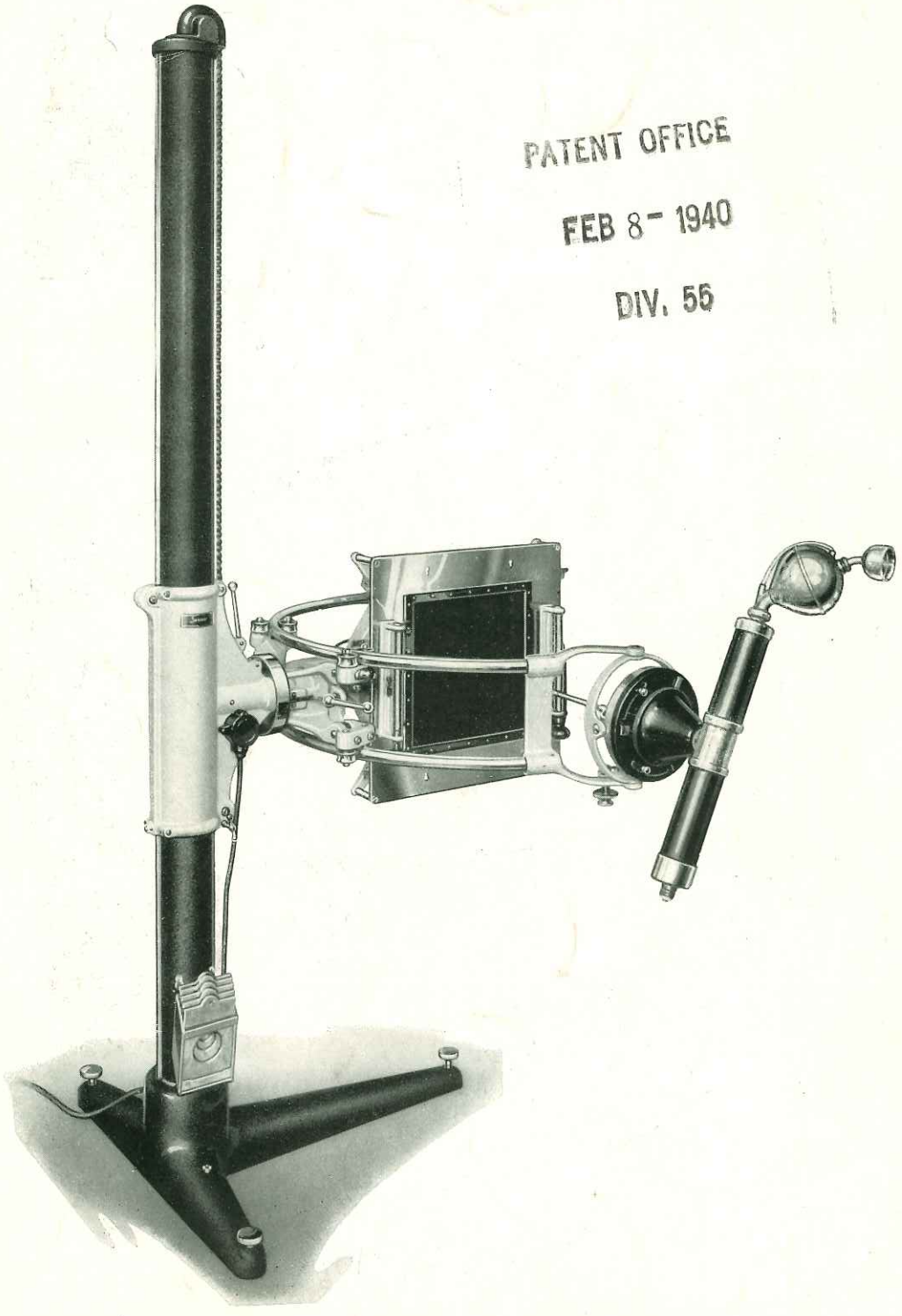
Perfect counter-balancing of all movable parts, and indicating scales on the apparatus, make adjustments unusually easy.

The Lysholm precision apparatus for cranial radiography, including movable Lysholm diaphragm.

Principal measurements:

Height of stand	215	centimeters
Length of tripod base	72,5	,,
Distance from shaft to farthest edge of table	100	,,
Weight, net	150	kilos

Set of 5 primary diaphragms
Auxiliary table
Sponge rubber mattress.



PATENT OFFICE
FEB 8 - 1940
DIV. 56

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